

In the third paragraph on page 2 of the above-identified Office action, claims 3-6 have been rejected as being obvious over *Muraoka et al.* (US 5,324,966) in view of *Seki* (US 5,025,293) and *Baliga* (US 5,396,087) under 35 U.S.C. § 103.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 3 (similarly claim 5) calls for, inter alia:

A semiconductor component, comprising:

...

a **first base region** having a weak doping with a **given conductivity type**;

...

a **buffer layer** being doped to **have said given conductivity type**, said buffer layer being disposed between said first base region and one of said two remaining regions connected to said drain contact;

... a doping of said buffer layer being chosen such that, in an operating state in which the semiconductor component effects blocking in a direction from said

source contact toward said drain contact, at least in an envisaged range of applied electrical voltages, a space charge zone present in said first base region is formed in a manner extending at least as far as said buffer layer; and

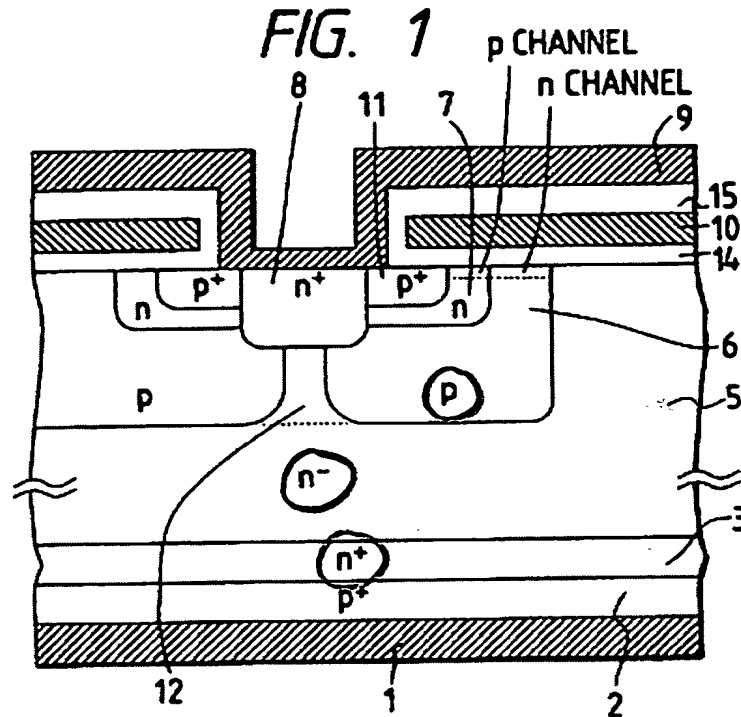
a further buffer layer being doped to have said given conductivity type and being disposed between said first base region and said second base region, a doping of said further buffer layer having a magnitude causing the semiconductor component to block in a direction from said drain contact toward said source contact in an envisaged range of opposite applied electrical voltages.

On page 3 of the Office action, the Examiner stated that:

Muraoka et al. teach a semiconductor component, comprising: ... a weakly doped **first base region 5** with a **conductivity type**, ... a **buffer layer 3** being doped to have the **given conductivity type**, the buffer layer being disposed between the first base region and on of the two remaining regions connected to the drain contact; a **further buffer layer 6** being doped to have a **given conductivity type** and being disposed between the first base region and the second base region; ... (Figure 1, cols. 7-8, lines 18-68 and 1-59, respectively).

(Emphasis added)

Fig. 1 of Muraoka et al. is re-produced below:



Clearly, Muraoka et al. do not show, as argued by the Examiner, a first base region 5, a buffer layer 3, and a further buffer layer 6 having the same conductivity type, as recited in claims 3 and 5 of the instant application.

Furthermore, in Muraoka et al. the semiconductor component with the reference number 3 is not a buffer layer but a "p-type base (or gate) region 6 [serving] as main electrode regions" of the p-MOSFET (col. 7, lines 22-23). The purpose and function of the "base (or gate) region 6" is explained in great detail in cols. 6 and 7 of Muraoka et al..

On page 3 of the Office action, the Examiner stated in regard to the applied secondary references:

However, Muraoka et al. fail to teach a further buffer layer being doped to have a given conductivity type; a second base region extending as far as the first main side and a source contact being connected to a second base region. Seki teaches a further buffer layer 2b being doped to have the given conductivity type (Figure 1, cols. 3-4, lines 31-68 and 1-68, respectively). Baliga teaches a second base region 19 extending as far as the first main side and a source contact 20 being connected to a second base region (Figure 3, col. 6, lines 18-65). Baliga further teaches a doping of a layer having a magnitude causing the semiconductor component to block in a direction from the drain contact toward the source contact (reverse) in an envisaged range of opposite applied electrical voltages (cols. 2-4, lines 43-51, 14-26 and 42-44, respectively).

Considering the deficiencies of *Muraoka et al.*, it is believed not to be necessary at this stage to address the secondary references *Seki* and *Baliga*, and whether or not there is sufficient suggestion or motivation with a reasonable expectation of success for modifying or combining the references as required by MPEP § 2143.

The inventive concept of the invention of the instant application is to have a buffer layer on the source side and a further buffer layer on the drain side, thereby combining the advantage of punch-through dimensioning (small thickness of the component) with the advantage of non-punch-through dimensioning (possibility of symmetrical blocking capability).

The references do not disclose or suggest a semiconductor with

a buffer layer on the source side and, furthermore, a buffer layer on the drain side. Therefore, the invention as recited in claims 3 and 5 of the instant application is believed not to be obvious over the references.

It is accordingly believed to be clear that *Muraoka et al.* in view of *Seki* and *Baliga* do not suggest the features of claims 3 and 5. Claims 3 and 5 are, therefore, believed to be patentable over the art and because claims 4 and 6 are ultimately dependent either claim 3 or claim 5, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 3-6 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, the Examiner is respectfully requested to telephone Counsel so that, if possible, patentable language can be worked out.

In view of the expiration of the statutory six months period for reply to the final Office action, enclosed with this response on a separate sheet is a *Request for Continued Examination* (RCE).

Petition for extension is herewith made. The extension fee for response within a period of three months pursuant to Section 1.136(a) in the amount of \$ 930.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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August 6, 2003

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